DOCUMENT RESUME

ED 151 744 CS 003 973

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TITLE Constructing a Test of Teacher's Knowledge of Reading.
PUB DATE Dec 77
NOTE 11p.; Paper presented at the Annual Meeting of the National Reading Conference (27th, New Orleans, Louisiana, December 1-3, 1977)

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Behavior Patterns; Beliefs; *Cognitive Processes; Educational Research; *Measurement Instruments; *Reading Instruction; *Teacher Attitudes; *Teacher Background; *Teacher Evaluation; Teaching Skills; Test Construction

ABSTRACT

As part of a larger project on teaching reading, this paper describes the work involved in constructing an effective instrument to evaluate teachers' knowledge of reading pedagogy. Existing tests were reviewed and rejected because of their focus on specific knowledge and diagnostic concepts rather than on measuring the knowledge implicitly tied to the concepts of reading. The paper proposes a field observation instrument based on the three forms of knowledge identified by J.F. Soltis: knowledge "that" refers to cognitive, verbal, or propositional knowledge; knowledge "how" explains noncognitive abilities that are teachable and learnable when one possesses certain skills; and knowledge "to," or the disposition to act in certain ways. The paper suggests that a first step in constructing items for the evaluation is to define the "thats" consistent with a given conception of reading in order to establish a basis for the "how" behaviors. (HAI)

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Constructing a Test of Teacher's Knowledge of Reading

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The work described in this paper is part of a larger project, Teacher's Conception of Reading, at the Institute for Research on Teaching.* The main purpose of the subproject is to construct a measure of teachers' knowledge of reading pedagogy. If the project is successful, the instrument will be used to provide supplementary information about the teachers of grades kindergarten through six who are being observed in the project. Teachers identified as having a particular conception will be given the test to determine whether a strong knowledge base is associated with a particular conception of reading or with a more open, eclectic conception. Ultimately, the goal is to determine (a) the extent to which specific knowledge is related to specific beliefs, and (b) whether teachers' knowledge of reading has an observable impact in their teaching of reading.

*Located at Michigan State University. The Institute for Research on Teaching is funded by the National Institute of Education.

CS503973

Some Problems

In addressing the task of constructing a knowledge test of reading pedagogy one must first decide what constitutes the relevant body of knowledge for such a test. This is complicated by the fact that one is inclined to be influenced by the varying and sometimes conflicting conceptual views of the subject matter of reading pedagogy that either overtly or implicitly describe and prescribe what *is* and/or what *ought* to be the relevant knowledge. To curb this inclination it is desirable to use techniques of philosophical analysis which offer the opportunity to objectively examine and think about the subject matter of reading pedagogy. By maintaining a stance of neutrality one is in a position both to gain a clearer understanding of the subject matter and to establish a firmer basis for making decisions as to whether this or that bit of knowledge will be included on the test. Put another way, one can view a complex subject from different perspectives with respect to establishing a knowlege base without canceling out one conceptual view while examining the validity of another. The fact is that at the present time it appears to be dysfunctional to pursue *the* method of the teaching of reading; consequently, it seems essential to recognize that purposeful teaching and learning can occur whatever one's conceptual belief, provided it is grounded in essential, core knowledge of the subject of reading.

The task begins, then, by seeking answers to this question: What kinds of subject matter must legitimately comprise the essential knowledge base of reading pedagogy. In considering what constitutes knowledge and what forms knowledge takes, Soltis (1968) identifies 3 forms of knowledge: knowledge *that*, knowledge *how*, and knowledge *to*. He argues that because

subject matter (knowledge) is a relational concept it is constructive to talk about it in the context of teaching and learning, where a basic triadic schema can be formulated as

Someone (S) teaches someone (P) something (x).

In such a context, subject matter refers to something which we speak of teaching and learning, where knowledge that, knowledge how, and knowledge to can be substituted for the x.

Soltis' three forms of knowledge can be briefly characterized. Knowledge that refers to cognitive, verbal, or propositional knowledge. One knows facts or has information; but being able to make appropriate statements about what is known does not necessarily imply an understanding of these facts. A large part of what is taught and learned in formal educational situations is this type of knowledge. An example of knowledge that would be Ms. Foxyteacher's knowledge of a definition for the schwa. She can state the definition and may even be able to make the schwa sound in oral reading but this does not necessarily indicate that she knows how to teach the schwa to children.

Knowledge how refers to noncognitive abilities that are teachable and learnable where one possesses certain skills and is able to perform certain operations with more or less success. Thus, one has the capacity to act in a certain way. For example, Ms. Phonicmeister knows how to read; and she endeavors to teach Johnny how to read. Ryle (1949) argues that there is a fundamental independence of verbal and performance knowledge. In line with this argument, it is true that knowing how to read does not imply or require one's knowing any thats of phonics. And, conversely, acquiring verbal knowledge of the thats of phonics content

does not assure that one will be able to read. Yet, it does not follow that teaching how does not require knowledge that. Ms. Phonicmeiser probably could not teach anyone how to decode unless she had at least implicit knowledge of some of the thats of phonic content.

Knowledge to refers to the propensity or disposition to act in certain ways. In acquiring knowledge to, one acquires "more than the capacity to act in a certain way and that something more is the tendency to so act" (Soltis, 1968, p. 38). For example, we can speak of Ms. S setting up experiences that will bring P to enjoy reading. In such an instance P will have something more than just facts about reading or the skills requisite to knowing how to read. That something more is the tendency or disposition to take the facts and skills acquired in the classroom and to use them in seeking out and taking advantage of opportunities to enjoy reading.

Existing Instruments

A review of the existing tests of knowledge of reading pedagogy reveals that most of them focus on specific knowledge, (knowledge that), notably phonics generalizations and other word recognition skills (Shannon, 1959; Farinella, 1960; Aaron, 1960; Ramsey, 1962; Broman, 1962; Durkin, 1964; McCollum, 1964; Spache & Baggett, 1965; Henriksen, 1967; Mallett, 1972; Thompson, 1972; Mazurkiewicz, 1975). Essentially, these tests assess teachers' knowledge of symbol sound relationships, terminology, definitions, and generalizations. The teacher is asked to supply a term, state a rule, or choose an example that demonstrates knowledge of specific word analysis skills. The implication is that the extent

to which teachers can and do teach their pupils phonics and syllabication skills is dependent upon their knowledge of the basic principles and mechanics of word analysis. While this is probably so, the fact remains that a demonstration of knowledge that is not a demonstration either of knowledge how or of ability to actually teach reading.

Several instruments focus on diagnostic concepts (Wade, 1960; Burnett, 1961; Thomas, 1975) and a test constructed by Artley and Hardin (1975) presumes to measure a teacher's understanding of the reading act and the strategies used in reading instruction. While the diagnostic measures and the Artley-Harden instrument assess broader areas than some of the other tests, the assumption that seems to be inherent in these tests appears to be that the universal set of thats exists for the teaching of reading. The problem is that variant conceptual views of the reading process are not acknowledged, so the possibility of alternative but equally acceptable teaching acts is not recognized.

The main limitation of existing tests, then, is that not one of the tests measures the knowledge implicity tied to various conceptions of reading - knowledge a teacher is likely to have if she/he holds a particular conceptual view. In essence, the existing tests do not sample the complex nature of the subject matter of reading pedagogy as it relates to differing conceptual views.

A Tentative Direction

Given teachers' varied conceptions of reading and the limitations of existing tests, Soltis' three forms of knowledge seem useful for getting at the knowledge essential to teachers of reading. Ideally, one

would probably wish to assess knowledge to, where the tendency to use the facts or skills that have been acquired would be measured rather than the facts or skills themselves. The problem is that observational techniques rather than paper and pencil devices would be required for the assessment and valid and reliable measures would be difficult as well as time consuming to obtain. Measurement of knowledge to would be prohibitively expensive for any extensive application.

In assessing knowledge that one would measure the factual information or propositions that form the basis for knowledge how. One would not attempt to establish the universal set of thats but, rather, acknowledge that a subset of thats exists relative to a particular conceptual view. The relevant knowledge that for a given teacher would depend, at least in part, on his/her conception of reading.

While the inclusion of knowledge that is probably essential in a knowledge test, items which measure knowledge how are of special significance for a test of reading pedagogy. Because teaching is a skilled behavior it is important to obtain an indication of the teacher's understanding of instructional procedures in addition to measures of facts and propositions. Since the universal set of thats does not exist and, since knowledge how is based on knowledge that, one cannot expect to come up with absolute hows. However, paper and pencil test items probably can be constructed which examine the hows of reading pedagogy and provide insights into teachers' conceptions of the teaching of reading.

A first step in constructing such items would be to define the thats which establish a basis for a how. That is, one would choose thats

which are consistent with a given conception of reading. With such a base established one could look for how behaviors consistent with the that base, or, in fact, one could construct items in one of two ways. One could set up a situation in the stem composed of a that or thats and the how answer would be contingent upon the thats which make up the how. One would say if that (or if that, that and that) then how. Items could also be constructed by setting up a how in the stem and the examinee would pick the option which supplied the reason for a certain action - which would be the basic thats.

Consider an example, where two thats are assumed:

1. General reading ability is facilitated when a child learns (masters) specific word recognition skills.
2. Proper use of the schwa sound is an important decoding skill.

In line with the thats, the following how item could be constructed:

In reading connected text, Smedley is unable to pronounce words containing the schwa sound. To help Smedley, the teacher should -

a. teach a lesson on the schwa sound
b. stress context as an aid in word recognition
c. provide concentrated drill with flashcards
d. ask Smedley to write and illustrate words with the schwa sound

Options a and b come from two different conceptions of reading pedagogy/development, with the "correct" answer dependent upon the conception of reading. Teachers who choose option a presumably believe there

should be an early emphasis on teaching the letter-sound relationships, while teachers who choose option b presumably stress meaning and view the graphophonic cueing system in relation to syntactic and semantic information for word recognition. Whether a subject has chosen the "correct" answer would depend on whether the subject accepts or rejects antecedent thats.

We will, no doubt, come up with still other options for constructing items. But one thing is perfectly clear; In reading pedagogy, "correct" answers depend as much on what one believes as on what can be empirically demonstrated to be so.

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